DESCRIPTION OF FOUR NEW BAGRID CATFISHES FROM AFRICA (SILURIFORMES : BAGRIDAE)

by

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SUMMARY.– Two new species are described in the genus *Chrysichthys : C. teugelsi* n. sp. from the Cavally River (Ivory Coast) and *C. polli* n. sp. from the Lower Zaire. *C. teugelsi* is characterised by a low number of gillrakers and by a short dorsal fin and is closely related to *C. maurus* and *C. auratus. C. polli* is related to *C. nigrodigitatus* and *C. bocagii*, but is showing a shorter dorsal fin, less gillrakers and a shorter nasal barbel. A new species is described in the genus *Phyllonemus, P. brichardi* n. sp. from Lake Tanganyika. This new species is characterised by an edentate vomer and by very long barbels, especially the outer mandibulary ones, reaching beyond the anal fin base. A new species is described in the genus *Auchenoglanis. A. akiri* n. sp. from Rivers State, Nigeria. This new species differs from the other species of the genus *Auchenoglanis* by its larger premaxillary toothplate, by the small dorsal eyes and by the absence of an obvious dotted pattern.

RÉSUMÉ.– Deux espèces nouvelles sont décrites dans le genre *Chrysichthys : C. teugelsi* n. sp. provenant du fleuve Cavally (Côte d'Ivoire) et *C. polli* n. sp. du Bas Zaire. *C. teugelsi*, caractérisé par un faible nombre de branchiospines et par une petite nageoire dorsale, est proche de *C. auratus* et *C. maurus. C. polli* est proche de *C. nigrodigitatus* et de *C. bocagii*, mais est caractérisé par une nageoire dorsale plus petite, un nombre faible de branchiospines et un court barbillon nasal. Une espèce nouvelle est décrite dans le genre *Phyllonemus : P. brichardi* n. sp. du lac Tanganyika, caractérisée par un vomer dépourvu de dents et par la longueur des barbillons, notamment les barbillons mandibulaires extérieurs dépassant la base de la nageoire anale. Une espèce nouvelle est décrite dans le genre *Auchenoglanis, A. akiri*, provenant de Rivers State, Nigeria, et caractérisée par une large bande de dents prémaxillaires, par la position supérieure des yeux et par la coloration uniforme, sans figures ni points géométriques.

Keywords : *Chrysichthys teugelsi, Chrysichthys polli, Phyllonemus brichardi, Auchenoglanis akiri*, Bagridae, Ivory coast, Africa Tanganyika L., Africa Zaire R., Nigeria, New species.

Four new bagrid catfishes from Africa could be described as a result of a systematic revision of this group. This revision is part of our doctoral research, and full data on the inter- and infra-generic affinities as well as lists of specimens examined, identification keys and methods of examination will be published later.

Type-specimens of the newly described taxa are deposited in the Musée Royal de l'Afrique Centrale, Tervuren, Belgium, and in the Muséum national d'Histoire naturelle, Paris.

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Chrysichthys teugelsi sp. nov.

Type-specimens.

Holotype MRAC n° 80-19-P-189 (171 mm SL), collected with gill-nets by L. Risch, G. Teugels and K. Traore on 21-24.IV.1980 in the Cavally River at Tai (5°52'N-7°27'W), Ivory Coast. Paratypes (15) MRAC n° 80-19-P-136 to −138 (114,4-133,6 mm SL), −175 to −184 (91,0-146 mm SL), −190 (124 mm SL) and −197 (144,6 mm SL), MNHN n° 1986-628 to 630 (114.4-133.6 mm SL) same data as the holotype.

Diagnosis.

Chrysichthys teugelsi is characterised by a deep head (more than 70 % of the head width), by a large eye (its longitudinal diameter longer than the length of the nasal barbel) and by an obtusely pointed snout. The occipital process is narrow (width at the base less than 2/3 of the length). The notched premaxillary toothplate is small (width less than 1/5 of the head length), covering at most only half of the mouth width. The dorsal fin height is shorter than the head length. The first branched dorsal finray is the longest, or subequal to the second. There are only 10-12 sparse, crenated gillrakers on the lower part of the first branchial arch, 6-8 branched anal finrays, and 8-(9) soft pectoral finrays. The mandibulary barbels are short and thick, closely inserted to each other, with a papillous chin in between.

Description (Fig. 1 A-D).

Body proportions and meristic counts are given in table I.

Body moderately elongate. Head long, 1/3 of the standard length. Snout obtusely pointed. Upper lip papillate. Humeral spine well developed, reaching up to the level of the dorsal spine. Occipital process narrow, in contact with the triangular predorsal shield. Nasal barbel short, hardly reaching the anterior edge of the orbit. Maxillary barbel short, hardly reaching the posterior end of the operculum. Outer mandibulary barbel short, up to the anterior end of the operculum. Inner mandibulary barbel reaching the middle of the orbit. The two pairs of thick mandibulary barbels are inserted close to each other, and in between large papillae are found.

Dorsal spine strongly serrated on the posterior side. Dorsal fin shorter than the head length. First or second soft dorsal finray longest, but never prolonged. Adipose fin moderate, the length of its base shorter than, or as long as, the length of the base of the dorsal fin. Pectoral spine well developed, strongly serrated on the inner side. Pectoral fin short, at most reaching the base of the ventral fin. Anal fin short, its base shorter than or equal to the base of the adipose fin. Caudal fin bifurcate, upper lobe sharp and slightly longer than the lower lobe.

Premaxillary toothplate short, widely notched in the middle and covering only half of the mouth width. Vomerine toothplate well developed, even in young specimens (91.0 mm SL). Palatine toothplate only developing in larger specimens,

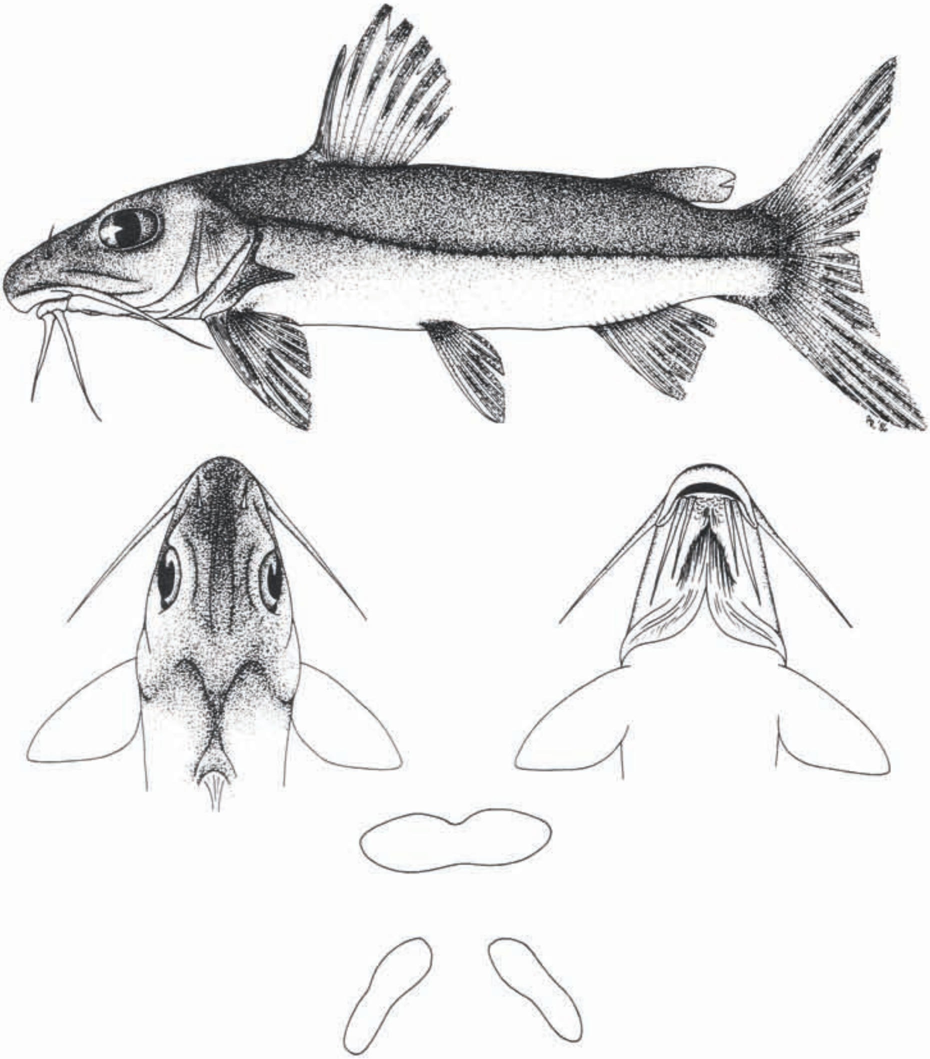

Fig. 1.– *Chrysichthys teugelsi* n. sp. (holotype). SL = 171 mm.
A. Lateral view. – B. Dorsal view of the head. – C. Ventral view of the head. – D. Outline of the toothplates.

first as isolated teeth (140-150 mm SL), later as a longer, narrow plate, confluent with the vomerine toothplate.

Living specimens are silvery with a whitish belly. Preserved specimens are darkish brown above the lateral line and greyish beneath. Sometimes there is a black spot behind the operculum. The dorsal fin shows a thin black distal margin.

Affinities.

Chrysichthys teugelsi is most closely related to other westafrican *Chrysichthys*-

Table I.– Body proportions and meristic counts of *Chrysichthys teugelsi* sp. nov. (See list of abbreviations).

parameter	number	mean	S.D.	C.V.	holotype	range paratypes
body proportions :						
SL (mm)	16	125.9	18.6	14.8	171.0	91.0 - 145.3
BD (% SL)	15	19.5	0.8	4.2	18.9	18.3 - 20.3
WOP (% HL)	15	10.3	0.6	6.1	10.5	9.4 - 11.6
LOP (% HL)	15	20.5	1.6	8.1	20.9	16.7 - 24.1
SOF (% SL)	16	27.9	0.6	1.8	38.5	36.7 - 39.3
SPF (% SL)	15	31.0	1.3	4.4	30.3	29.3 - 35.7
HL (% SL)	16	33.1	0.6	2.0	32.4	32.0 - 34.0
HD (% HL)	16	43.2	1.6	3.7	44.6	40.6 - 45.8
HW (% HL)	16	61.1	2.6	4.3	62.5	56.4 - 65.4
SHS (% HL)	16	114.3	2.1	1.9	117.0	109.8 - 118.5
BDF (% SL)	15	12.7	0.7	5.7	12.7	11.5 - 14.0
LDS (% SL)	9	19.7	1.7	8.8	15.6	13.6 - 21.8
LDF (% SL)	11	26.0	1.4	5.3	22.9	24.9 - 28.2
DFA (% SL)	15	23.3	2.0	8.7	24.2	20.0 - 27.2
BA (% SL)	15	12.3	0.9	7.8	13.7	10.4 - 14.0
AC (% SL)	15	16.1	0.9	5.7	16.1	14.3 - 18.4
LPS (% SL)	8	19.5	1.5	7.8	16.6	19.1 - 21.9
PFVF (% SL)	16	26.1	1.5	5.9	27.5	22.7 - 28.2
LVF (% SL)	15	19.6	0.8	4.5	19.4	17.8 - 20.8
VFAF (% SL)	15	18.3	1.4	7.9	19.4	15.1 - 20.1
BAF (% SL)	15	11.2	0.6	6.1	10.7	9.8 - 12.2
LAF (% SL)	14	21.3	1.3	6.4	17.1	20.5 - 23.1
AFC (% SL)	15	14.6	0.6	4.4	14.6	13.7 - 16.4
ULC (% SL)	12	34.7	1.6	4.7	–	31.1 - 36.8
LLC (% SL)	12	31.5	1.6	5.3	27.3	30.5 - 33.8
FCF (% SL)	14	12.1	0.8	7.0	12.8	10.6 - 13.4
TOR (% SL)	15	32.5	1.4	4.3	33.2	29.7 - 34.7
ED (% HL)	15	24.8	1.9	7.7	21.7	22.2 - 28.2
SNL (% HL)	15	39.4	1.9	4.8	43.0	35.6 - 43.1
MW (% HL)	15	36.3	2.8	7.6	32.9	31.2 - 41.8
NB (% HL)	15	11.3	1.6	14.4	13.4	8.2 - 13.2
WPT (% HL)	16	16.7	1.4	8.7	18.4	13.7 - 19.2
DPT (% HL)	15	5.2	0.5	11.1	5.8	3.7 - 6.0
WOP (% LOP)	15	50.6	5.2	10.4	50.0	42.8 - 64.7
DPT (% WPT)	16	31.3	3.4	11.0	31.4	24.5 - 36.9
WPT (% MW)	15	47.0	4.0	8.4	56.0	41.4 - 51.4
meristic counts :						
D	16	6			6	6
P	16	8.3	0.4	5.7	8	8 - 9
V	16	5			5	5
A-branched	16	6.8	0.5	7.9	7	6 - 8
GR	16	11.1	0.7	6.5	11	10 - 12

species, showing a deep head, a narrow occipital process, a low number of pectoral finrays, crenated gillrakers, a short notched premaxillary toothplate and thick, short mandibulary barbels (Risch, 1981). These characters are shared by the sympatric *Chrysichthys maurus*, and the allopatric *Chrysichthys walkeri* and *Chrysichthys auratus*. However *C. teugelsi* differs from *C. maurus* by the low gillraker count (GR : 10-12, mean 11, versus (11)12-15(16), mean 13 for *C. maurus*) and by the short dorsal fin, which is, unlike in *C. maurus*, shorter than the head length. The first soft dorsal finray is usually longest, sometimes subequal to the second, but, unlike in *C. auratus*, the finray is never prolonged into a filament. The length of the base of the adipose fin is shorter than, or as long as, the base of the dorsal fin, unlike in *C. auratus* and *C. walkeri*, where the base of the adipose fin is longer.

Etymology.

Dedicated to Dr. G. Teugels (MNHN, Paris), ichthyologist and co-collector of the type-specimens.

Chrysichthys polli sp. nov.

Type-specimens.

Holotype MRAC n° 47814 (99.0 mm SL), collected in Yelelola (falls). Lower Zaire (5°43'S-13°34'E), in 1937 by Dartevelle. Paratypes (10) : MRAC n° 48564 (78.4 mm SL) from Boma, Lower Zaire (5°50'S-13°03'E) (coll. Delguste, 1937), 48570-48572 (59.2-111.6 mm SL) from Boma. Lower Zaire (coll. Delguste, 1937), 56305-56306 (98.1 and 98.5 mm SL) from Malela, Lower Zaire (5°59'S-12°38'E) (coll. Darteville, 1938), 94012 (78.9 mm SL) from Boma, Lower Zaire (coll. Mesmaekers) and MNHN 1986-631 to 633 (65.2-80.0 mm SL) from Boma, Lower Zaire (coll. Mesmaekers).

The type-specimens were previously identified as *Chrysichthys persimilis*, *Chrysichthys walkeri*, *Chrysichthys duttoni*, *Chrysichthys cranchii* and *Chrysichthys sp.*, but were apparently never mentioned in literature.

Diagnosis.

Chrysichthys polli is characterised by a deep head (height more than 66 % of the head length), by a large eye (its longitudinal diameter longer than the length of the nasal barbel), by an obtusely pointed snout, by the narrow occipital process (width at the base less than 2/3 of the length), by the low number of slender gillrakers (13-14), by the low number of soft pectoral finrays (8, rarely 9) and by the low number of anal finrays (total number : 12-14). But the slightly notched premaxillary toothplate is wider than in the previous species (width 1/5-1/4 of the head length), covering more than 3/5 of the mouth width. The mandibulary barbels are more slender as in previous species, but still papillae are found in between them.

Description (Fig. 2 A-D).

Body proportions and meristic counts are given in table II.

Body moderately elongate. Head less than one third of the standard length. Snout obtusely pointed, slightly rounded. Humeral spine well developed, but not reaching beyond the level of the dorsal spine. Occipital process narrow, in contact with the triangular predorsal shield. Nasal barbel short, hardly reaching the anterior edge of the orbit. Maxillary barbel moderate reaching the tip of the humeral spine. Outer mandibulary barbel moderate, up to the posterior end of the operculum. Inner mandibulary barbel reaching the end of the orbit. The two pairs of slender mandibulary barbels are distantly set and in between small papillae are found.

Dorsal spine short, strongly serrated on the posterior side. Dorsal fin short, much shorter than the head length. First or second soft dorsal finray longest, but never prolonged. Adipose fin small, the length of its base shorter than the length of the base of the dorsal fin. Pectoral spine well developed, strongly serrated on the inner side. Pectoral fin short, not reaching the base of the ventral fin. Anal fin moderate, its base longer than or equal to the base of the adipose fin. Caudal fin bifurcate and very short, upper lobe rather rounded and slightly longer than the lower lobe.

Premaxillary toothplate moderate (longer than in most westafrican species, but shorter than in most zairean species), slightly notched in the middle and covering 2/3 of the mouth width. Vomerine toothplate well developed, even in young specimens (59.2 mm SL). Palatine toothplate already developed as a small patch in specimens longer than 70 mm SL and confluent with the vomerine toothplate in mature specimens.

Preserved specimens are dark brown above the lateral line and lighter beneath. Sometimes there is a black band behind the operculum. The dorsal and caudal fin may show a tiny black margin.

Chrysichthys polli is a dwarf catfish, mature at small size (70-80 mm SL), and the largest specimen observed is only 111 mm SL. As in related species, adult specimens, when sexually mature, have a different general appearance during the spawning season , dorsal, pectoral and caudal fins shorten and round; head, mouth and premaxillary toothplate widen; vomero-palatinal toothplate enlarges, broadens and often extends to the ectopterygoid; nasal barbel becomes longer. These modifications increase gradually and are much more explicit in males than in females (table II).

Affinities.

Because of its moderate size of mouth, premaxillary toothplate and nasal barbel, *Chrysichthys polli* is more closely related to the westafrican *Chrysichthys* species than to most zairean species.

It differs from the *C. auratus-C. maurus* group by the lanceplate shape of the gillrakers (instead of crenated), by the wider premaxillary toothplate, which is only slightly notched in the middle and by the slender mandibulary barbels. These fea-

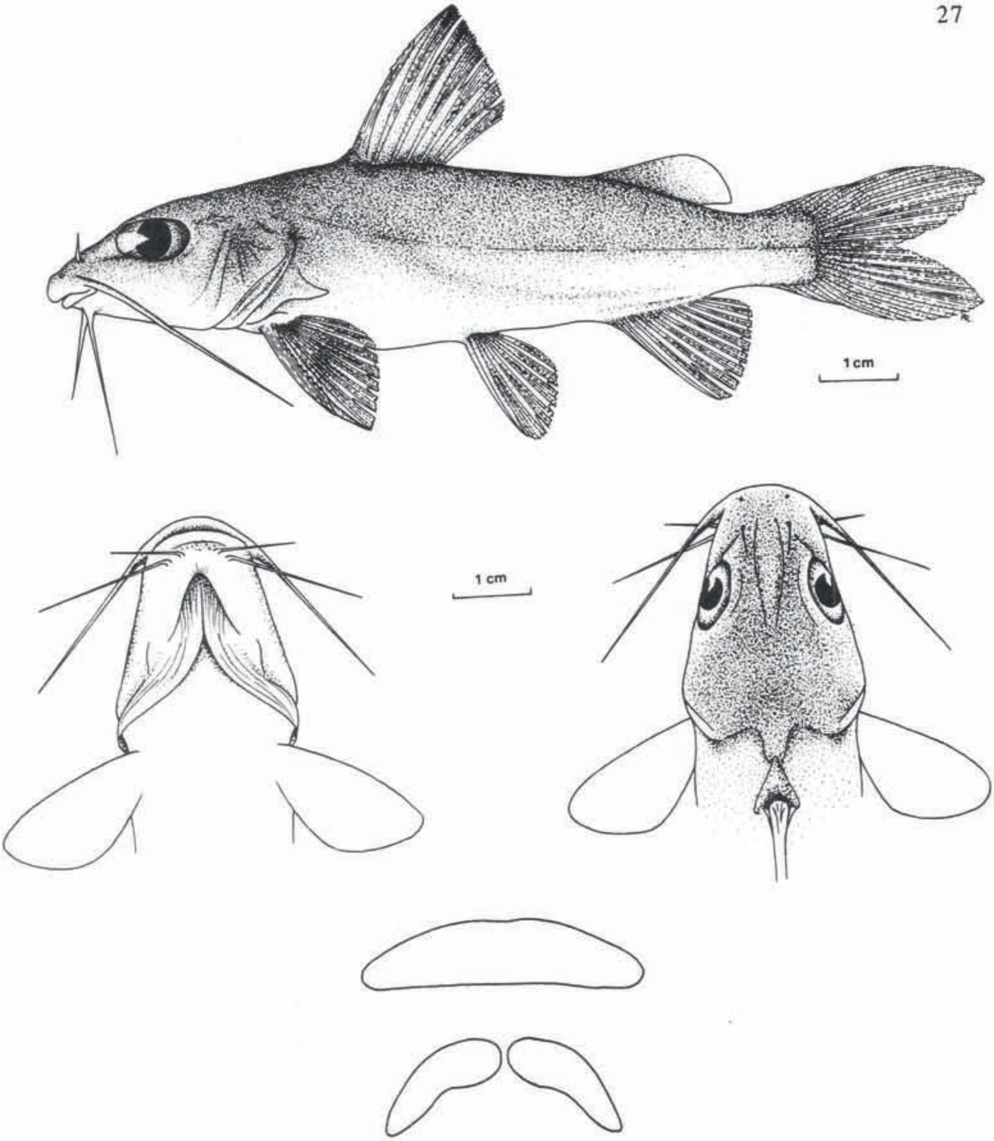

Fig. 2.– *Chrysichthys polli* n. sp. (holotype). SL = 99 mm.
A. Lateral view. – B. Dorsal view of the head. – C. Ventral view of the head. – D. Outline of the toothplates.

tures correspond with those found in *Chrysichthys bocagii* (from the Quanza and Bengo rivers in Angola). *Chrysichthys nigrodigitatus* (ubiquitous in western Africa and sympatric in the Lower Zaire) and *Chrysichthys ogooensis* from the Ogowe river in Gabon. But the latter two show a higher number of gillrakers (more than 15), a higher number of pectoral finrays (9 or 10, rarely 8) and a higher number of branched anal finrays (9 or more).

Chrysichthys polli may be considered as an intermediate species, most closely

Table II.– Body proportions and meristic counts of *Chrysichthys polli* sp. nov. : (1) : maturing male MRAC 48571; (2) : mature female MRAC 48570; (3) : mature male MRAC 48564 (See list of other abbreviations).

parameter		n	mean	S.D.	C.V.	holo-type	range paratypes	(1)	(2)	(3)
body proportions :										
SL	(mm)	11	83.9	16.1	19.2	99.0	59.2 -111.6	84.2	111.6	78.4
BD	(%SL)	11	20.8	1.0	5.2	20.1	19.3 - 22.5			
WOP	(%HL)	9	11.6	0.9	8.3	12.4	9.6 - 12.9			
LOP	(%HL)	9	18.9	0.9	4.8	19.3	17.2 - 20.3			
SDF	(%SL)	11	37.9	1.5	4.0	37.5	35.4 - 40.7			
SPF	(%SL)	11	31.1	0.5	1.6	30.8	30.1 - 31.8			
HL	(%SL)	11	32.8	0.8	2.5	32.2	31.5 - 34.1			
HD	(%SL)	11	44.4	3.7	8.4	39.1	40.9 - 52.9			
HW	(%SL)	8	60.4	4.2	7.0	53.7	55.4 - 65.3	60.7	62.2	66.4
SHS	(%HL)	11	110.9	2.3	2.0	110.5	107.8 -115.3			
BDF	(%SL)	11	12.8	0.8	6.3	14.1	12.1 - 14.3			
LDS	(%SL)	8	19.6	1.6	8.1	18.8	17.8 - 23.0	19.1	16.3	16.3
LDF	(%SL)	6	23.7	1.2	4.9	–	21.8 - 25.0	21.5	20.6	20.8
DFA	(%SL)	11	21.3	1.5	9.8	20.3	18.6 - 23.7			
BA	(%SL)	11	11.5	0.9	8.1	11.5	9.3 - 12.3			
AC	(%SL)	11	18.1	0.9	5.5	18.6	16.9 - 19.8			
LPS	(%SL)	8	20.6	1.4	6.7	18.5	19.9 - 23.2	17.1	18.0	20.0
PFVF	(%SL)	11	27.1	1.6	6.2	26.9	24.6 - 30.1			
LVF	(%SL)	11	18.8	0.9	4.9	18.0	17.7 - 20.4			
VFAF	(%SL)	11	14.8	0.9	6.1	13.5	13.8 - 16.3			
BAF	(%SL)	11	12.8	0.6	5.4	12.3	11.5 - 13.8			
LAF	(%SL)	11	20.5	1.0	5.0	19.8	19.2 - 22.4			
AFC	(%SL)	11	17.1	0.9	5.6	16.9	15.8 - 18.4			
ULC	(%SL)	1	–	–	–	–	28.8			
LLC	(%SL)	2	–	–	–	–	20.4 - 23.4	20.4	19.7	18.9
FCF	(%SL)	11	10.2	0.9	9.1	9.9	8.1 - 11.6			
IOR	(%HL)	11	29.9	2.7	8.9	29.8	27.1 - 36.1			
ED	(%HL)	11	32.0	2.8	6.9	32.6	25.8 - 35.5			
SNL	(%HL)	11	35.3	2.5	7.3	35.4	32.0 - 40.3			
MW	(%HL)	8	38.0	3.6	9.6	34.1	33.5 - 41.9	47.7	45.5	51.6
NB	(%HL)	8	12.9	1.8	14.2	10.6	9.9 - 14.9	17.7	18.0	19.1
WPT	(%HL)	8	25.4	1.5	6.0	23.6	23.3 - 27.5	29.2	29.4	32.4
DPT	(%HL)	11	5.7	1.0	17.0	3.7	4.5 - 6.9			
WOP	(%LOP)	9	61.7	6.3	10.3	64.5	47.7 - 68.7			
DPT	(%WPT)	11	21.0	2.8	13.5	16.8	15.7 - 25.5			
WPT	(%MW)	11	66.8	5.3	8.0	69.0	59.7 - 78.6			
meristic counts :										
D		11	6			6	6			
P		11	8.2	0.4	5.6	8	8 - 9			
V		11	5			5	5			
A-branched		11	8.3	0.5	6.0	8	8 - 9			
GR		11	13.4	0.5	3.8	13	13-14			

related to *Chrysichthys bocagii* (also showing only 8 pectoral finrays), from which it differs in the number of anal finrays (AII : 8-9 for *C. polli* versus 9-11 for *C. bocagii*) and by the shorter nasal barbel (NB/HL : 0.10-0.15 for *C. polli* versus 0.16-0.28 for *C. bocagii*). The first soft dorsal finray is longest but shorter than the head, unlike in *C. bocagii*, in which the second soft dorsal finray is longest, and as long as the head.

Etymology.

Dedicated to Dr. M. Poll, the well-known ichthyologist and former head of the Vertebrate section of the Tervuren Museum.

Phyllonemus brichardi sp. nov.

Type-specimen.

Holotype MRAC n° 83-19-P-14 (77.5 mm SL), collected in Ubwari, face est, lac Tanganyika (Zaire) by P. Brichard, 6.IV.1983.

Diagnosis.

Phyllonemus brichardi can be easely identified by its toothless palate, its long barbels, especially the outer mandibular ones, measuring more than twice the head length and longer than the maxillary barbels (unique among the claroteinids) and by the long adipose fin, which base is longer than the distance between the dorsal fin and the adipose fin.

Description (Fig. 3).

Body proportions and meristic counts are given in table III.

Body elongate. Head longer than 1/3 of the standard length, 2 times as long as broad, 2.3 times as broad as high. Occipital process narrow, not connected to the predorsal plates. Snout rectangular, 1.3 times as broad as long. Humeral spine absent. Nasal barbel absent. Maxillary barbel long, reaching the anterior end of the anal fin. Outer mandibulary barbel extremely long, reaching the caudal fin base. Inner mandibulary barbel long, reaching the posterior end of the dorsal base. Dorsal spine short, shorter than the dorsal fin base. Dorsal fin moderate, second soft finray longest. Adipose fin long, its base longer than the distance between the dorsal fin and the adipose fin. Pectoral spine more developed than the dorsal spine, but still small. Ventral and anal fins moderate. Caudal fin bifurcate, both lobes subequal and deeply forked.

Premaxillary toothplate long and slender, 1/3 of the head length, 0.7 times the mouth width, not notched in the middle. Vomerine teeth absent.

The coloration of the preserved specimen is dark brown.

A specimen of *Phyllonemus filinemus* was caught together with the holotype of *P. brichardi*.

Table III.– Body proportions and meristic counts of ***Phyllonemus brichardi*** sp. nov., compared to the ranges of specimens identified in the MRAC as *P. filinemus* and *P. typus* (See list of abbreviations).

parameter		holotype	range *P. typus*	range *P. filinemus*
body proportions :				
SL	(mm)	77.5	58.4 - 82.3	47.1 -
BD	(%SL)	12.1	12.0 - 16.6	10.6 - 14.5
SDF	(%SL)	41.9	36.3 - 41.2	32.2 - 43.3
SPF	(%SL)	33.5	29.4 - 31.9	28.2 - 33.0
HL	(%SL)	36.5	31.2 - 33.5	27.3 - 36.9
HD	(%HL)	21.6	28.4 - 34.1	24.3 - 34.3
HW	(%HL)	48.8	46.7 - 59.4	43.2 - 60.9
BDF	(%SL)	11.5	8.5 - 11.4	8.9 - 12.0
LDS	(%SL)	11.0	9.2 - 14.1	10.2 - 14.1
LDF	(%SL)	22.7	14.6 - 20.1	15.6 - 21.1
DFA	(%SL)	10.3	14.8 - 23.3	15.0 - 24.4
BA	(%SL)	20.9	13.4 - 20.0	12.2 - 20.8
AC	(%SL)	14.6	13.0 - 15.8	12.9 - 17.1
LPS	(%SL)	13.3	10.3 - 14.7	11.8 - 14.7
PFVF	(%SL)	23.9	21.8 - 28.7	17.2 - 28.0
LVF	(%SL)	18.1	14.0 - 17.0	12.9 - 18.1
VFAF	(%SL)	15.5	14.8 - 17.2	12.9 - 17.0
BAF	(%SL)	12.6	10.8 - 13.7	11.0 - 15.4
LAF	(%SL)	20.8	19.5 - 23.5	17.9 - 25.4
AFC	(%SL)	15.5	15.1 - 18.5	14.6 - 18.7
ULC	(%SL)	24.5	18.7 - 21.8	17.7 - 22.2
LLC	(%SL)	24.5	20.0 - 21.8	15.7 - 24.8
FCF	(%SL)	9.3	11.2 - 12.7	9.3 - 12.6
IOR	(%HL)	23.3	22.1 - 27.2	21.9 - 28.6
ED	(%HL)	15.9	16.3 - 24.7	19.8 - 25.4
SNL	(%HL)	36.0	32.1 - 36.4	30.8 - 36.5
MW	(%HL)	45.9	42.9 - 49.7	40.8 - 51.5
MXB	(%HL)	201.4	117.2 - 160.8	136.1 - 206.6
MNB1	(%HL)	226.1	77.1 - 98.4	82.6 - 120.9
MNB2	(%HL)	102.5	43.4 - 55.9	40.9 - 60.0
WPT	(%HL)	32.5	36.6 - 40.4	35.6 - 42.0
DPT	(%HL)	3.2	4.3 - 6.0	3.6 - 6.2
OPT	(%WPT)	9.8	6.9 - 8.9	6.2 - 10.1
WPT	(%MW)	70.8	74.0 - 91.4	74.4 - 84.8
meristic counts :				
D		6	6	6
P		8	8	8
V		5	5	5
A-branched		7	7 - 8	7 - 8
GR		15	12 - 14	14 - 17

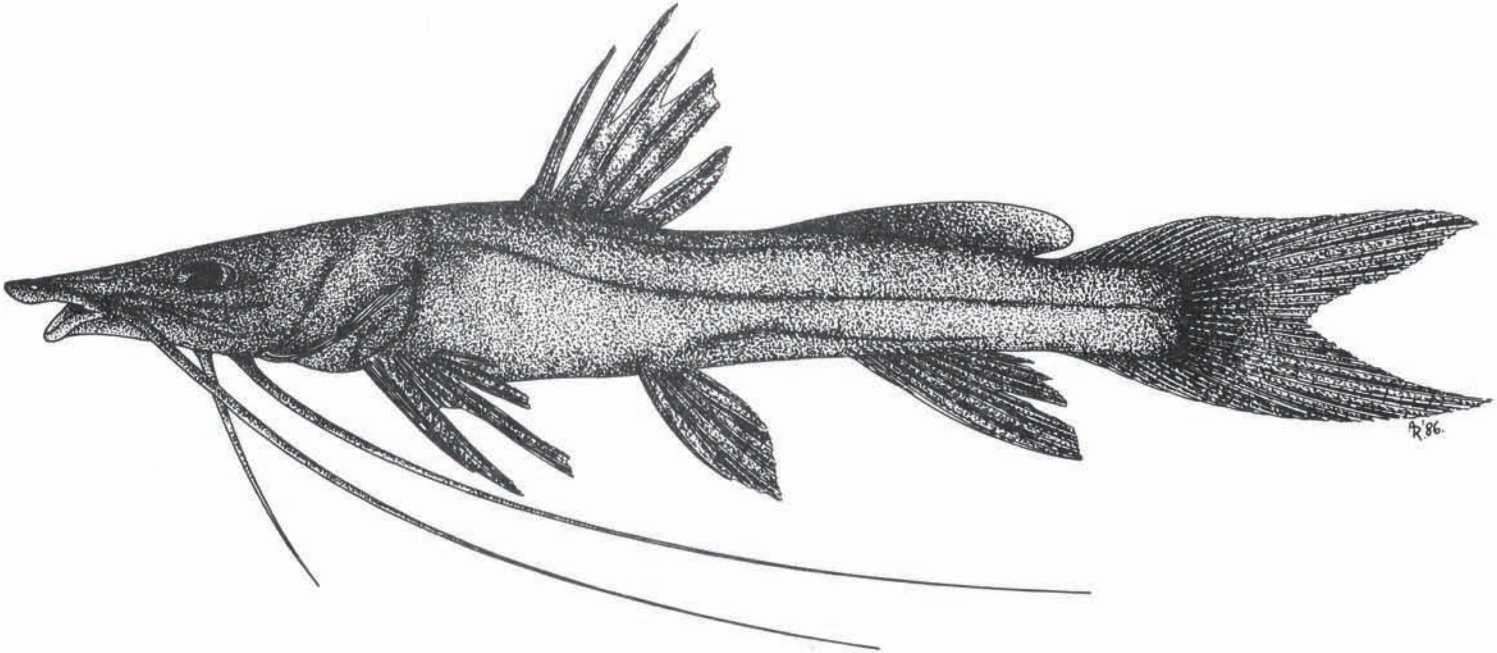

Fig. 3.– ***Phyllonemus brichardi*** n. sp. (holotype). SL = 77.5 mm.
Lateral view.

Discussion and affinities.

The genus *Phyllonemus* was described by Boulenger (1906) as differing from the genus *Chrysichthys* Bleeker, 1858, by the absence of nasal barbels, the presence of a leaf-like membrane in the distal part of the maxillary barbel and the presence of only vomerine teeth on the palate. In *Phyllonemus typus,* the type-species, the maxillary barbels are 1.66 times as long as head and the outer mandibulary ones as long as head. Boulenger (1906) described the species on a single specimen from L. Tanganyika.

Worthington & Ricardo (1937) enlarged the description of *Phyllonemus*: they added that the palatine toothplate extends on the ectopterygoids (also in the type-specimen of *P. typus*), and that the maxillary barbel membrane is not always 'leaf-like'. They redescribed *P. typus,* on the basis of 20 specimens. The maxillary barbel is 1.33-1.66 times as long as head and the outer mandibulary barbel is as long as or a little shorter than the head length. The palatine toothplate consists of a transverse band on the vomer, interrupted in the middle and extending at the sides on the pterygoids. There are 14-16 long, thin gillrakers on the lower part of the first branchial arch.

Worthington & Ricardo (1937) also described a new species, *P. filinemis,* on eight specimens. This new species differs from *P. typus* by a longer and thinner body, a longer and less flattened head, longer barbels (maxillary barbel 1.6-2 times as long as head, outer mandibulary barbel 1-1.25 times as long as head) and longer and more numerous gillrakers (16-18). The palatine toothplate is similar to that in *P. typus.*

Poll (1953) recognised both species as valid and noticed, on the basis of newly collected specimens, that the length of the maxillary barbel in *P. typus* was 1.22-1.53 times the head length. The presence of a membrane and the presence of a small number of gill-rakers (13 to 16, generally 14) separated this species from *P. filinemus,* which has a slightly longer maxillary barbel (1.4-1.5 times as long as head) without a membrane, or only with a very small one, and with 15 to 17, mostly 16-17 gillrakers. Both species show a vomerine toothplate. The outer mandibulary barbels mesured 79-85 % of the head length in *P. typus* versus 80-100 % in *P. filinemus.*

Jayaram (1966) used mainly the data from Boulenger (1911) and Worthington & Ricardo (1937). He wrongly extended the zoogeographical distribution to Kenya, by mislocating Kibwezi, a collecting locality on lake Tanganyika, in Kenya, where a homonymous locality is found. Jayaram (1966) raised the maximum size of *P. typus* up to the exceptional length of 194 mm, mentioning a non-registered specimen from Nyanza (Poll coll.), while the maximum size hitherto known is only 102 mm (Poll, 1953).

Bailey & Stewart (1984) mentioned both species, adding 44 new specimens to the species *P. typus* and 5 to the species *P. filinemus.* They noted for *P. typus* strongly expanded distal flanges on the maxillary barbel and (13) 14 (16) gillrakers on the lower limb of the first arch, whereas the maxillary barbel in *P. filinemus* is only slightly flattened but without notable flanges. *P. filinemus* has (15) 16-17 gillrakers. Bailey & Stewart also noted some new differences between both species : in *P. typus* the mental barbels are inserted well behind the lower jaw, the inner pair originating between or slightly ahead of the angles of mouth. Pectoral and pelvic fins are pale. In *P. filinemus* on the other hand, the insertion of the mental barbels is remote from the lower jaw, all originating behind the level of the mouth angles, and the pectoral and pelvic fins are dusky.

Phyllonemus brichardi belongs to the genus *Phyllonemus*, because of the absence of a nasal barbel, the short occipital process, the absence of a numeral process, the anterior position of the anterior nostril, the small dorsal spine and the long adipose fin.

But, at present it is difficult to establish the affinities of *P. brichardi*, as only the holotype is known. We are convinced that this specimen is not a teratologic aberration of either of the two known species. The diagnostic characters are proved to be distinctive at specific level in the related genus *Chrysichthys* (a very long maxillary barbel in *C. longibarbis*, a reduction and even absence of the vomero-palatinal toothplate in *C. longipinnis*, *C. longidorsalis*, and related species).. The absence of vomerine teeth is a distinctive character, but the taxonomic value is still to be established, pending the collection of more specimens : we observed in some *Chrysichthys* species that the reduction of the vomerine toothplate was more important than the absence, as in some species. The smaller premaxillary toothplate in *P. brichardi* most probably also constitutes a specific feature, but the interpretation of biometrical data is only possible after the examination of a sample.

To complete the discussion on *Phyllonemus*, we mention that Mr. P. Brichard also collected another peculiar *Phyllonemus* specimen (MRAC n° 84-23-P-637, loc. : 8 km au Nord du Cap Zongwe, 14.VI.1984), which we cannot identify correctly. This specimen (49.5 mm SL, an egg-bearing female) also shows an edentate vomer, but has a small maxillary barbel (MXB/HL : 106 %). Furthermore, it shows 7 branched dorsal finrays, a very long adipose fin (BA/SL : 23.8 % and a tiny eye (ED/HL : 15.0 %).

Etymology.

Dedicated to Mr P. Brichard, collector of the holotype.

Auchenoglanis akiri sp. nov.

Type-specimens.

Holotype, MRAC n° 84-15-P-9 (91.0 mm SL), collected in Umayara Mba, Etche, Rivers State, Nigeria (5°12'N-7°06'E), by Mrs P.J. Akiri on 20/8/1983.

Paratypes (2), MRAC n° 84-15-P-3/4 (90.0-93.1 mm SL), same data as holotype.

Diagnosis.

Auchenoglanis akiri is characterised by a small occipital process, not in contact

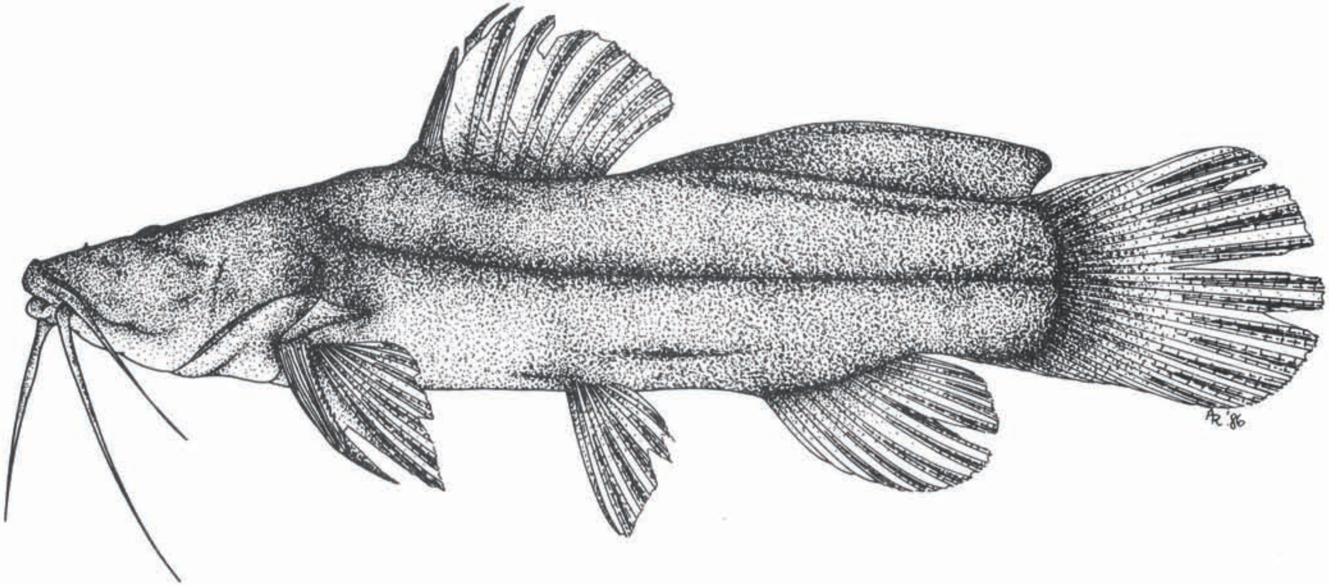

Fig. 4.– *Auchenoglanis akiri* n. sp. (holotype). SL = 91 mm.
Lateral view.

with the predorsal plates, by a long premaxillary toothplate (5 to 6 times in the head length), although much smaller than in species of the genus *Parauchenoglanis*. The uniform dark colour pattern, without geometrically arranged dark spots, is also a specific character.

Description (Fig. 4).
Body proportions and meristic counts are given in table IV.

Table IV.– Body proportions and meristic counts of ***Auchenoglanis akiri*** sp. nov. (See list of abbreviations).

parameter		holotype 84-15-P-9	paratype 84-15-P-3	paratype 84-15-P-4
body proportions :				
SL	(mm)	91.0	90.0	93.1
BD	(%SL)	22.0	20.3	19.5
SDF	(%SL)	37.4	35.3	36.4
SPF	(%SL)	32.4	31.3	31.7
HL	(%SL)	34.3	33.3	33.3
HD	(%HL)	32.7	34.3	35.2
HW	(%HL)	70.5	65.7	69.0
SHS	(%HL)	109.3	107.3	110.3
BDF	(%SL)	18.2	18.9	19.4
LDS	(%SL)	11.5	13.8	14.2
LDF	(%SL)	18.7	17.8	17.5
DFA	(%SL)	0.0	0.6	0.0
BA	(%SL)	38.9	37.8	37.1
AC	(%SL)	4.9	4.7	5.5
LPS	(%SL)	19.2	17.7	17.6
PFVF	(%SL)	23.6	24.4	25.6
LVF	(%SL)	17.6	18.7	16.1
VFAF	(%SL)	13.7	13.4	14.0
BAF	(%SL)	15.4	15.7	14.4
LAF	(%SL)	22.5	25.3	22.8
AFC	(%SL)	13.2	13.6	13.2
CF	(%SL)	25.3	22.3	21.5
IOR	(%HL)	20.2	22.7	21.0
ED	(%HL)	6.4	8.0	8.1
SNL	(%HL)	36.2	34.0	35.8
MW	(%HL)	48.1	48.7	46.5
WPT	(%HL)	19.2	18.0	16.8
DPT	(%HL)	8.0	6.7	8.1
OPT	(%WPT)	41.7	37.2	48.2
WPT	(%MW)	40.0	37.0	36.1
meristic counts :				
D		7	7	7
P		7	7	7
V		5	5	5
A- branched		9	9	10
GR		8	9	9

Body moderately elongate. Head depressed, long, 1/3 of the standard length. Snout obtusely rounded. Eyes superior, small, without free border. Upper lip papillate. Humeral spine well developed, reaching up to the level of the dorsal spine. Occipital process narrow, not in contact with the triangular predorsal shield. Gill membranes free, but ventrally united to each other. Maxillary and outer mandibulary barbel reaching beyond the tip of the humeral spine. Inner mandibulary barbel reaching the anterior edge of the operculum.

Dorsal spine short, feebly serrated on the posterior side. Dorsal fin short, subequal to its base. Second, third and fourth soft dorsal finray longest. Adipose fin long, originating immediately after the dorsal fin, the length of its base longer than head. Pectoral spine well developed, strongly serrated on the inner side. Pectoral fin short, at most reaching the base of the ventral fin. Anal fin moderate, its base shorter than the base of the dorsal fin. Caudal fin round or slightly emarginate.

Premaxillary toothplate long compared to other *Auchenoglanis* species, covering 1/3-2/5 of the mouthwidth. Its shape is rather trapezoid with rounded angles, different from kidney-shaped as in most other *Auchenoglanis* species.

The specimens are uniform brownish, without a regular dotted patern.

Comments and affinities.

Describing a new species in the genus *Auchenoglanis* Günther, 1865, is rather complex. The internal arrangement of this genus and its relationships to the related genus *Parauchenoglanis* Boulenger, 1911, are the subject of present research (Risch and Teugels, in preparation).

Species of the genus *Parauchenoglanis* differ from species of the genus *Auchenoglanis* in having a larger premaxillary toothplate (1/4-1/3 of the head length, versus smaller than 1/6 in *Auchenoglanis*), in having free, not united gill membranes (versus free, but ventrally united to each other in *Auchenoglanis*) and a small dorsal eye, without free border (versus a supero-lateral eye with free border in *Auchenoglanis*). *Auchenoglanis akiri* is in some respects intermediate between the genera *Auchenoglanis* and *Parauchenoglanis* : the small, almost superior eye, without free border refers to species of the genus *Parauchenoglanis*, but the gill membranes are fused together as in species of the genus *Auchenoglanis*. The premaxillary toothplate is rather long, but not as long as in species of the genus *Parauchenoglanis* : WPT/HL : 8.3-12.4 % (*Auchenoglanis* spp. from S. Nigeria, Cameroon, Zaire, and Gabon), 14.9 % (*Auchenoglanis buettikoferi* Popta, 1913, holotype), 16.8-19.2 % (*Auchenoglanis akiri* sp. nov.) and 29.8-33.4 % (*Parauchenoglanis* spp. from Cameroon and Zaire).

Auchenoglanis akiri also differs from most of these species in the absence of a regular colour pattern : the specimens are uniformly brownish. This feature is apparently only shared with *Auchenoglanis buettikoferi* Popta, 1913, only known from its holotype caught in the same region (Warri, Nigeria). *Auchenoglanis akiri* differs by the longer adipose fin (BA/SL : 0.37-0.39 versus 0.30), the small superior eyes (ED/HL : 0.06-0.08 versus 0.14) the shorter snout (SNL/HL : 0.34-0.36 versus 0.48) and wider mouth (MW/HL : 0.46-0.49 versus 0.42). *A. akiri* also shows only 7 branched pectoral finrays versus 8 for *A. buettikoferi.*

Etymology.

Dedicated to Mrs P.J. Akiri (Rivers State University of Science and Technology, Port Harcourt, Nigeria), ichthyologist and collector of the type-material.

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List of abbreviations.

A-branched : number of branched anal fin rays;
AC : distance between the end of the adipose fin and the end of the body;
AFC : length of the caudal peduncle;
BA : length of the base of the adipose fin;
BAF : length of the base of the adipose fin;
BD : body depth;
BDF : length of the base of the dorsal fin;
CF : length of the caudal fin rays;
DFA : distance between the end of the dorsal fin and the anterior part of the adipose fin;
DPT : depth of the premaxillary toothplate;
ED : eye diameter;
FCF : length of the caudal fin at the deepest part of the fork;
GR : number of gillrakers on the lower part of the first branchial arch;
HD : head depth;
HL : head length;
HW : head width;
IOR : interorbital width;
LAF : length of the anal fin;
LDF : length of the dorsal fin;
LDS : length of the dorsal spine;
LLC : length of the lower lobe of the caudal fin;
LVF : length of the ventral fin;
LOP : length of the occipital process;
LPS : length of the pectoral spine;
MRAC : Musée Royal de l'Afrique Centrale, Tervuren;
MXB : length of the maxillary barbel;
MNB1 : length of the outer mandibulary barbel;
MNB2 : length of the inner mandibulary barbel;
MW : mouth width;
n : number;
NB : length of the nasal barbel;
P : number of branched pectoral finrays;
PFVF : distance between the posterior end of the base of the pectoral fin and the posterior part of the base of the ventral fin;
S.D. : standard deviation;
SDF : distance between the snout and the dorsal fin;
SHS : distance between the snout and the posterior tip of the humeral spine;
SNL : snout length;
SPF : distance between the snout and the posterior part of the base of the pectoral fin;
SL : standard length;
ULC , length of the upper lobe of the caudal fin;
V : number of branched ventral finrays;
VFAF : distance between the end of the base of the ventral fin and the beginning of the anal fin;
WOP : width of the occipital process;
WPT : width of the premaxillary toothplate.

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